CLAIM AMENDMENTS

Please amend Claims 68, 69, 71, 73, and add new Claims 75-82, as follows:

1. - 67. (Cancelled)

68. (Currently Amended) A process for crystal growth by using a crystal growth apparatus comprising a crucible for holding a crystal material; and a heating means, ~~which is capable of forming at a periphery of the crucible a temperature gradient within a temperature range including a melting point of the crystal material, a supporting means for supporting a center bottom of the crucible, a cooling means provided at the supporting means, and a plurality of temperature detectors provided at the bottom of the crucible for detecting a temperature distribution across a first plane at the bottom of the crucible, the process~~ comprising the steps of:

providing a plurality of temperature detectors at the bottom of the crucible;

~~using said plurality of temperature detectors to detect the~~

detecting a temperature distribution across ~~said first plane~~ the bottom of the crucible by using the plurality of temperature detectors; and

controlling the heating means ~~and the cooling means~~ such that ~~in the~~ detected a temperature ~~distribution across said first plane of the crucible, a temperature almost~~ at a center portion of ~~said first plane~~ the bottom of the crucible is ~~minimized~~ smaller than a temperature at a periphery portion of the bottom of the crucible.

69. (Currently Amended) The process according to claims 68, 71, 72, 73, or 74, in which the crystal growth apparatus also includes a cooling means, wherein said process further comprises a step of controlling the cooling means, and wherein said step of controlling the cooling means is effected by adjusting a flow rate of cooling medium flowed into the cooling means.

70. (Previously Presented) The process according to claims 71, 72, 73, or 74, wherein the temperature detecting means includes a plurality of thermocouples and said step of detecting the temperature distribution is effected by said thermocouples.

71. (Currently Amended) The process according to claim 68, ~~A process for crystal gr A process for crystal growth by using a crystal growth apparatus comprising a crucible for holding a crystal material, a heating means which is capable of forming at a periphery of the crucible a temperature gradient within a temperature range including a melting point of the crystal material, a supporting means for supporting a center bottom of the crucible, a cooling means provided at the supporting means, and a temperature detecting means provided at the bottom of the crucible for detecting a temperature distribution across a first plane at the bottom of the crucible, the process comprising the steps of:~~

~~detecting the temperature distribution across said first plane of the crucible; and~~

~~controlling the heating means and the cooling means such that in the detected temperature distribution across said first plane of the crucible, a temperature almost at a center portion of said first plane of the crucible is minimized;~~

wherein the interior of the crucible is divided into plural layers by a plurality of disks formed across respective cross-sections of the crucible, wherein the temperature detecting means is further provided in the disks, and wherein said process further comprises the step of detecting a temperature distribution across said respective disks.

72. (Previously Presented) The process according to claim 71, wherein each disk has an opening at almost its center.

73. (Currently Amended) A process for crystal growth by using a crystal growth apparatus comprising a crucible for holding a crystal material, the crucible being divided into plural layers by a plurality of disks formed across respective cross-sections of the crucible, the crystal growth apparatus further comprising a heating means, ~~which is capable of forming at a periphery of the crucible a temperature gradient within a temperature range including a melting point of the crystal material, a supporting means for supporting a center bottom of the crucible, a cooling means provided at the supporting means, and a temperature detecting means provided in at least one of the disks for detecting a temperature distribution across that disk, the process~~ comprising the steps of:

providing a temperature detecting means in at least one of the disks;

detecting the temperature distribution across said at least one of said disks by using said temperature detecting means; and

controlling the heating means ~~and the cooling means~~ such that in the detected temperature distribution across said at least one disk, a temperature ~~almost~~ at a

center portion ~~thereof is minimized~~ of cross-sections of the crucible is smaller than a termperature at a periphery portion of the respective cross-sections.

74. (Previously Presented) The process according to claim 73, wherein each disk has an opening at almost its center.

75. (New) The process according to claim 68 or claim 73, wherein the crystal growth apparatus comprises a cooling means, and a step of controlling the cooling means is effected by adjusting a flow rate of a cooling medium flowed into the cooling means.

76. (New) The process according to claim 68 wherein a temperature at a center portion of the bottom of the crucible is minimized.

77. (New) The process according to claim 73, wherein a temperature at a center portion of the cross-sections of the crucible is minimized.

78. (New) A crystal growth apparatus comprising a crucible for holding a crystal material, a heating means, a plurality of temperature detectors provided at the bottom of the crucible for detecting a temperature distribution, and a control means for controlling the heating means such that a temperature at a center portion of the bottom of the crucible is smaller than a temperature at a periphery portion of the bottom of the crucible.

79. (New) A crystal growth apparatus comprising a crucible for holding a crystal material, the crucible being divided into plural layers by a plurality of disks formed across respective cross-sections of the crucible, the crystal growth apparatus further comprising a heating means; a temperature detecting means provided in at least one of the disks for detecting a temperature distribution across that disk; and a control means for controlling the heating means such that in the detected temperature distribution across at least one disk, a temperature at a center portion of cross-sections of the crucible is smaller than a temperature at a periphery portion of cross-sections of the crucible.

80. (New) The crystal growth apparatus according to claim 79 or claim 79, wherein the crystal growth apparatus comprises a cooling means, and the control means adjusts a flow rate of cooling medium flowed into the cooling means.

81. (New) The crystal growth apparatus according to claim 78, wherein a temperature at a center portion of the bottom of the crucible is minimized.

82. (New) The crystal growth apparatus according to clam 79, wherein a temperature at a center portion of cross-sections of the crucible is minimized.